LEWIS' MOCKORANGE

Philadelphus lewisii Pursh

plant symbol = PHLE4

Contributed by: USDA, NRCS, Pullman Plant Materials Center, Pullman, Washington

Alternate Names

Common names: mockorange, syringa, Gordon's mockorange, Indian arrowwood, wild mockorange

Synonyms: Philadelphus gordonianus Lindl., *Philadelphus lewisii* Pursh var. *angustifolius* (Rydb.) Hu, *Philadelphus lewisii* Pursh var. *ellipticus* Hu, *Philadelphus lewisii* Pursh ssp. *gordonianus* (Lindl.) Munz, *Philadelphus lewisii* Pursh var. *gordonianus* (Lindl.) Jepson, *Philadelphus lewisii* Pursh var. *helleri* (Rydb.) Hu, *Philadelphus lewisii* Pursh var. *intermedius* (A. Nels.) Hu, *Philadelphus lewisii* Pursh var. *oblongifolius* Hu, *Philadelphus lewisii* Pursh var. *parvifolius* Hu, *Philadelphus lewisii* Pursh var. *platyphyllus* (Rydb.) Hu

Uses

Lewis' mockorange furnishes excellent cover and habitat for wildlife, providing good browse for deer and elk. It is not grazed extensively by livestock but does receive fair amounts of use in some areas. Palatability increases following resprouting from fire. Quail, squirrel and mule deer also use mockorange for food.

Mockorange can be a valuable plant for revegetating disturbances on steep, rocky, unstable slopes. It can also be planted in drier areas of degraded riparian zones.

It is used as an ornamental in borders, screens and hedges. Other uses include low-maintenance landscaping and recreational area plantings.

Ethnobotany: Native American used stems for making arrows, bows, combs, tobacco pipes, cradles and netting shuttles.

Status

Please consult the PLANTS Web site and your State Department of Natural Resources for this plant's current status (e.g. threatened or endangered species, state noxious status, and wetland indicator values).

Description

General: Lewis' mockorange, the state flower of Idaho, was named for Captain Meriwether Lewis, who collected the plant in 1806. Mockorange is a native, deciduous, erect to spreading shrub that grows to 3 to 10 feet tall. Showy white flowers occur in clusters of three to fifteen. It is extremely variable in vegetative and floral characteristics. Leaves are opposite, simple, ovate to elliptic-ovate, with entire to remotely dentate margins. Flowers are white, 1 to 1.4 inches across, with four

petals. Fruit is a small dark brown capsule. Seeds are small, averaging 5,300,000 per pound. Roots are fibrous.

Distribution: Lewis' mockorange occurs in Washington, Oregon, Idaho, Montana and California in the United States. It also occurs in Alberta and British Columbia in Canada.

For current distribution, please consult the Plant Profile page for this species on the PLANTS Web site.

Habitat: Lewis' mockorange occurs on well-drained, moist sites. It grows on deep, rich alluvial loams to rocky or gravelly loams. It is commonly found on rocky sites, at the base of talus slopes and cliffs, along streams, and seasonally moist draws. It is found at talus margins in the Columbia River Basin. It occurs at seeps, springs and rocky wet areas in the Crooked River National Grasslands in central Oregon.

Mockorange occurs from sea level up to 7,000 feet in the Cascade Range. Lewis' mockorange grows best on northern and eastern exposures.

Lewis' mockorange is tolerant of moderate shade. It is an early to mid-seral species, and is often present in seral shrub communities.

Mockorange tolerates fire and persists in forested environments where fire frequency is 5 to 45 years. It resprouts from adventitious buds in the root crown after top kill by fire.

Associated Species: Associates include alders *(Alnus spp.),* serviceberry *(Amelanchier alnifolia),* red-osier dogwood *(Cornus sericea),* beaked hazelnut *(Corylus cornuta)*, hawthorns *(Crataegus spp.),* oceanspray (*Holodiscus discolor*), hollyleaved barberry (*Mahonia aquifolium*), ninebark *(Physocarpus malvaceus),* chokecherry *(Prunus virginiana* Oregon white oak *(Quercus garryana),* baldhip rose (*Rosa gymnocarpa*), willows *(Salix spp.),* poison-oak (*Toxicodendron diversilobum*) and others.

Adaptation

Soil textures range from coarse to medium. Soil pH is from 5.6 to 7.8. Precipitation ranges from 14 to 69 inches annually. Sites range from low to mostly mid-elevation.

Establishment

Propagation from seed: Three samples of seed averaged 5,300,000 seeds per pound. Seeds that were cold stratified in coarse moist sand for 8 weeks at 41^0 F and placed in coarse sand medium at 72 - 79^0 F germinated at 64 to 72 percent. Fall sowing is an alternative to cold stratification. Seedlings may be subject to kill by spring frost.

Propagation from summer softwood cuttings: Leafy softwood cuttings of current season's growth can be rooted in coarse grade perlite with bottom heat and mist. Cuttings were taken 4 weeks (May 20) after plants fully leafed out. Cuttings should be treated with fungicide if needed and then treated with .1% Indole-butyric acid powder (rooting hormone) on the freshly cut ends before sticking. Rooting media should be kept at approximately 75 - 77^0 F. Room temperature should be 5 to 10 degrees cooler. Mist interval used was about 15-20 seconds (on) per 20 minute period. Rooting occurs in approximately 18 to 30 days when plants can be transferred to a hardening table with mist. Time required to grow usable plants in containers (10 cubic inch) is approximately 90 days.

Conservation Plantings: These plantings are usually done using potted plants produced from seed. Plantings should be done early enough to afford establishment of plant roots before moisture becomes limiting for growth. Early plantings before the last spring frost should be done with dormant plants. Plants with leaves are at risk for spring frost. Sites should be prepared to minimize competition from grasses and weeds. Weed barrier is one option for reduction of competition. Consult local NRCS offices for specific recommendations in your area. Mice, voles and other rodents can present problems in getting plants established. Physical barriers (tree tubes) are useful for protection from small rodents.

Management

Native and Conservation Stands:
Mockorange is moderately tolerant of browsing but heavy grazing by wild ungulates and livestock has a negative impact.

Pests and Potential Problems

No particular insect or disease problems are noted.

Other Pests: These include rabbits, mice/voles and deer. Animal repellents have been used with varying success. Physical barriers have provided better protection from rodents than repellents.

Environmental Concerns

None noted.

Seed and Plant Production

Lewis' mockorange is propagated via seeds, hardwood and softwood cuttings. Vegetative propagation of cultivar material is recommended to maintain uniformity of desired characteristics. Seed propagation is ordinarily used where uniformity of plant characteristics is not an issue, such as in conservation plantings. When seed propagation is used, fall planting in outside beds or artificial cold stratification is desirable to overcome dormancy and increase germination percentage.

Cultivars, Improved, and Selected Materials (and area of origin)

The Pullman Plant Materials Center, NRCS, Pullman, Washington released two mockoranges in 2002 as selected class releases. These were St. Maries Germplasm (St. Maries, Idaho) and Colfax Germplasm (Colfax, Washington). These materials both produced seed in the third year after being planted. Average bloom date was June 26 and fruit maturity was September 17 at Pullman, Washington. Both had excellent vigor, stem abundance, cold and drought tolerance ratings.

St. Maries Germplasm attained a height of 59 inches with a 75 inch canopy width in 5 years and a height of 79 inches and a 55 inch canopy width in 10 years.

Colfax Germplasm attained a height of 66 inches and a 41 inch canopy width in 5 years and a height of 87 inches and a 63 inch canopy width in 10 years.

'Waterton' was selected from the Waterton Lakes area of Alberta. 'Blizzard' was selected from the Morden Research Station, Manitoba. Most of these cultivars are apparently meant for landscape uses.

References

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For more information about this and other plants, please contact your local NRCS field office or Conservation District, and visit the PLANTS Web site<http://plants.usda.gov> or the Plant Materials Program Web site <http://Plant-Materials.nrcs.usda.gov>